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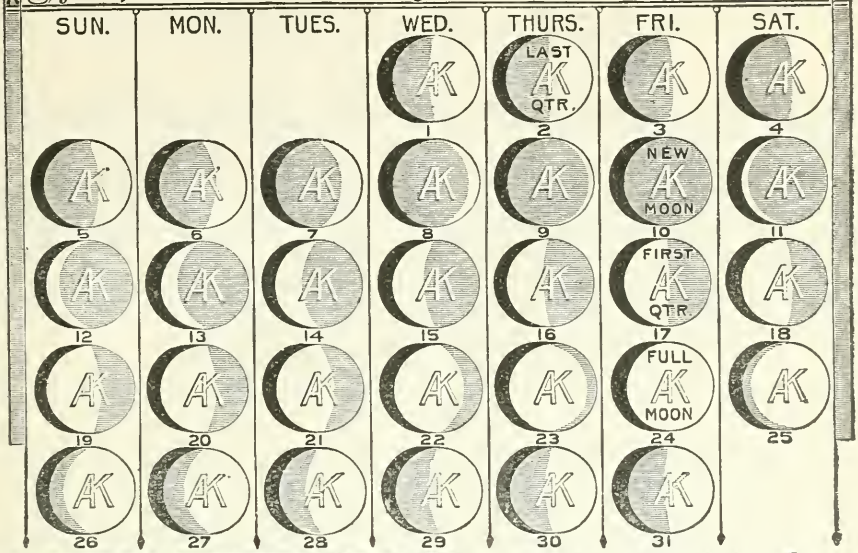

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Vol. II. AUGUST 15th, 1896. No. 4.

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TREATMENT OF RINGWORM OF THE SCALP IN INSTITUTIONS.*

By Charles W. Allen, M. D.,
New York.

I MUST express to you the gratification I feel in being privileged, through the courtesy of your worthy presiding officer, to participate in the discussion which he has so ably and instructively opened upon the interesting topic of Ringworm of the Scalp.

Since the subject will be approached from many different sides by the various speakers, I shall endeavor to keep well within prescribed bounds in giving you my views upon the proper management of trichophytosis capitis as it occurs among the inmates of various institutions in which large numbers of children are gathered together.

The management of trichophytosis capitis in schools, asylums, hospitals, or any other institutions in which children are received and mingle with others, must of necessity differ from the treatment of a single case, or even of a number of cases, in the family.

In the first place, we have the protection of other inmates to claim our most careful consideration, and therefore facilities must be provided for immediate and perfect isolation. Secondly, those who have almost recovered must be kept apart from the new cases, in which the disease is more acute, more active and more likely to be transmitted. It is not sufficient for prompt eradication of an epidemic of ringworm from an institution that the cases of the disease be kept by themselves. Some are more susceptible of rapid

*Read before the American Medical Association in Atlanta, Ga., May, 1896.

cure than others, but unless they are removed at a time when a cure seems to have been effected, they run the danger of becoming contaminated anew. Nor are we justified in returning these apparently cured cases to their former surroundings amid healthy children until they have undergone a period of probation in a non-infected place of isolation and observation.

In such institutions as exist for the reception and care of ringworm cases in common with other affections of childhood—that is, where they are admitted as ringworm cases, or as medical or surgical cases having ringworm incidentally, or in institutions established for the reception of sick and well alike, the former being kept as inmates after they are cured and have ceased to be patients—the conditions are more complicated, and the situation is correspondingly beset with difficulties. We must consider, then, the question of management as it affects :

1. The day-school and factory.
2. The boarding-school, home and asylum.
3. The children's hospital proper.

The discovery of scalp ringworm in a pupil of a public or private day-school, or in an employee of a factory or place of business where numbers of young people are employed, should be sufficient to exclude such a subject from further association with his companions until a thorough cure has been effected and sufficient time has elapsed to insure its permanency. The same course should be pursued in boarding-schools, homes and asylums ; but here, instead of sending the patient home, where the parents are expected to take the necessary measures to bring about rapid cure, it often becomes necessary to provide the proper isolation and hospital treatment. Few boarding-schools receive children at an age when they are so likely to contract and disseminate this disease. Orphan asylums, on the contrary, present all the most favoring conditions for the development of epidemic outbreaks. Children of all ages and states of health are often received, and contagious skin diseases do not debar them from admission.

Every infant asylum, at least, should therefore be provided with proper quarters for the isolation of these contagious cases. Such quarters need not be large, for if they are properly made use of no great number of cases to occupy them will ever exist as a result of spreading. They should, however, be arranged in such a way that the cases can be graded according to the various stages, if not in accordance with the different varieties of the disease and kept apart from each other, in a measure at least. A single isolation ward is

not sufficient. There must be in addition one or more observation wards for cases apparently cured, where they may be kept apart from the healthy inmates, while at the same time they are removed from the possibility of reinfection.

Such quarters as I have spoken of should be so constructed that they can be readily, rapidly and radically disinfected. The walls, ceilings and floors should be of a material which can at all times be washed and easily kept clean. In institutions long established in which repeated epidemics have occurred over a period of years, it is possible that the quarters used for the care and isolation of patients have become themselves so infested with the fungus growths that they are constant sources of infection, and should no longer be used for such purposes.

In children's hospitals special separate wards should exist for such cases, and trichophytic patients should not mingle with the inmates in general.

To avoid the inadvertent admission of hidden ringworm, the closest scrutiny of the heads of new patients should be a routine practice, since prophylaxis is of paramount importance. An untreated case in an active stage is sufficient to start a rapidly-spreading epidemic.

The rule which prevails in penal institutions of cutting the hair close to the scalp upon admission should be applied with much greater reason to hospitals, asylums and children's institutions generally.

In a large series of examinations for admission to such places, as many as eight ringworm cases have been detected in a hundred applicants, showing how necessary such prophylactic measures are. Some institutions, which stop at no trouble or expense to check an epidemic once started, do practically nothing in the way of preventing such a start. The management takes pride, if not pleasure, in curing disease, but does not pause to realize that it may be engaged in the business of making sickness. The layman, even though a trustee or director of such institutions, has often not been instructed out of his ignorant belief that ringworm is a slight affection.

Another prophylactic measure is the exclusion of the patent clipper from the toilet armamentarium of the institution. I thoroughly believe that this time and skill-saving device has done more for the dissemination of contagious scalp diseases than any other single factor.

I do not doubt in the least that this instrument can be used with little or no danger of spreading the germs, but that it ever is so used

in large institutions by the class of attendants to whom the hair-cutting is usually confided, I seriously question.

Even the scissors should be sterilized or disinfected before being used on a second case.

Now, as to the management of the individual cases and their medicinal treatment, let me premise with the statement that so far as I am aware there exists at the present moment no such thing as a rapid cure for chronic ringworm of the scalp.

When I read in the public press that in an institution in New York City where about 375 cases of this disease existed at one time, recently, the physician in charge was accused of incompetency because he did not cure the cases rapidly and stamp out the epidemic at once, I felt pretty confident, from my own past experience, that the institution authorities were not doing their part in supplying adequate facilities for proper isolation, and this has since been shown to have been the case. The further statement was made that so soon as a competent man was put in control the epidemic vanished in a few weeks. Concerning this statement, I knew that either the physician first in charge had been sufficiently competent to bring the cases to the verge of recovery before he was supplanted, or that in reality the epidemic still existed, the cases having simply been put into a sufficiently presentable shape to pass muster, since no means at our command are capable of working so wonderful a transformation within a space of a few weeks. Upon inquiry, I found that the newspaper information contained, as it often does, a large percentage of misinformation, hence I was drawing conclusions from faulty premises. The epidemic had developed gradually. There had always been a few cases, but in March, 1895, it was supposed that they were all cured. Clippers were used indiscriminately for hair cutting. Six months later there were about 360 cases. The physician advised isolation. The management claimed that they could keep the children apart at table and in the dormitories, but not in the play-grounds.

It is not surprising that such isolation resulted in no abatement. It was at this period that a specialist was called in. He, however, wisely refused to undertake the task unless the afflicted were carefully separated from the well. This having been done, energetic treatment was instituted, and after a period of three or four months the epidemic was considered at an end. Such disagreeable experiences could be avoided if managing boards would not insist upon usurping the prerogatives of the medical board and those of the medical attendants, and would devote more attention to the carrying

out of the physician's recommendations. It is so much easier and cheaper to isolate a few cases absolutely at first than it is to attempt the same thing after the number has run into the hundreds.

A personal experience embracing a number of children's institutions with which I have been regularly connected and others to which I have been occasionally called at times when ringworm has prevailed has taught me that painstaking supervision and almost daily inspection of the cases is a necessity, no matter how willing and faithful the attendants, dressers, nurses or care-takers may be. They must be taught and retaught not only what to do but when to stop doing it. Over-treatment is often as much to be guarded against as lack of attention. If too much irritation is produced it may cause just those conditions which are favorable to spread and persistence of the disease. Continued irritation may lead to a state of the scalp more difficult to cure than the affection in its original form.

The intelligent command of an experienced physician, with orders changed or modified from day to day to suit the various cases, must be credited with a large share of the success when a campaign against this enemy results in short and decisive victory. Besides the form of medication to be chosen and the mode and duration of its application there comes up the important question of when a patient can be taken from among the ringworm cases and placed in the observation ward or intermediary quarantine, and the still more important one of when it can safely be permitted to rejoin its healthy companions.

The relative value of the multitude of drugs which have at one time or another been advocated is not always readily determined because of the very great difference in behavior of different cases under any treatment. In estimating their worth, too, one is apt to lose sight of the condition of the patient; one patient furnishing by reason perhaps of a strumous state a soil which the fungus is most loath to quit, while another is in such a state of general good health that the trichophyton seems incapable of securing a lasting foothold.

I do not mean to say that apparently healthy children exposed to the contagion will wholly escape. There is, however, something which permits some to escape most lightly, while infection from the same source and caused by the same variety of trichophyton produces its most severe effects in others. There must too be some quality of soil in the infant as in the adult which is unsuitable for the fungus' growth. If this quality could be determined and supplied, by diet or otherwise, children of the ring-worm age they too

might have immune. Strumous appearing, pale, lymphatic, poorly nourished children would surely seem to present a condition of scalp most favorable to rapid spread, and these should surely receive such internal remedies as cod liver oil and some of the iodine preparations.

I would not go so far as some of our homeopathic brothers who advocate exclusive internal treatment, but I believe I have seen good results from diet and internal medication, and I always advise keeping these children as much as possible in the open air and sunlight, believing that indoor life, especially if the rooms are dingy, greatly favors rapid growth of this as it does of other moulds.

Again, the form of local treatment to be adopted varies somewhat according as the ringworm is disseminated or diffuse, i. e., in one or more large patches, or perhaps occurring in numerous small spots.

In any event the hair is cut short with barbers' shears or the scalp is shaved. This is necessary for girls as well as boys in institution life, since it not only facilitates treatment but permits of the necessary observation and oversight. The scalp is then best washed with bichloride, and, if open wounds are absent, such a solution as the following can be employed : Bichloride, 1 ; alcohol, 100 ; water, 500.

Most of the remedies recommended are parasiticides, and many contain mercury in one form or another. One which we have found to act well at the Randall's Island Infant Asylum has the following composition :

℞ Hydrarg. Bichl. gr. x.
Bals. Peru, ʒ iii.
Oli. lavandulae, ʒ i.
Spt. vini Rect. ad., ℥ i.

This can naturally be applied to a patch of limited extent only.

Another, which is almost always of marked benefit for a time, is composed of :

℞ Sulphur, ℥ i.
Hydrarg. ammon, ʒ iv.
Bals. Peru, ʒ iii.
Lanolin,
Vaselin, āā ℥ ii.

Care must necessarily be exercised in any of these stronger mercurial preparations.

A non-mercurial solution which I introduced at this institution

and which had the effect of clearing the surface rapidly of evidences of the disease, was composed of :

Menthol,	gr. 10.
Thymol,	gr. 10.
Chloroform,	♏ xxx.
Water,	℥ i.

Another was :

℞ Hydrarg. nitratis.
Ichthyol, āā ʒ i.
Collodion, ℥ i.

or

Thymol,	2,
Chloroform,	8,
Ol. Oliv.,	24,

as proposed by Morris.

Another plan somewhat employed was to cover the scalp with a sufficiently large piece of spread mercurial plaster. After securing a certain amount of irritation by these means it is better to withhold entirely such strong remedies and resort for a season to the blandest topics until the inflammation has subsided. Then the same, or, often better, another equally powerful parasiticide remedy is to be reapplied. After various attempts with various methods, naturally used in connection with strict cleanliness, the hair being made short by cutting or shaving, shampooings, antiseptic washes, etc., I have come to the conclusion—which is one also reached by a number of observers—that chrysarobin is to-day the best drug at our command for securing an efficient and prompt effect. It has its disadvantages, which are well known. It is uncleanly both for the patient and for bed linen and clothing. It is liable to produce dermatitis and staining of the skin, and if care is not exercised it may affect the eyes disagreeably. Still it is the best drug we possess, and in employing it recently in about ninety cases I was enabled to obviate most of the disagreeable effects by exercising due care, first in its application, and secondly in preventing its being spread to other parts by the patients themselves through advertent rubbing and distributing it. There are various ways of minimizing this disadvantage by caoutchouc and other caps or head dressings, and the suggestion has been made to fasten such a cap securely over the forehead by means of a rubber or adhesive bandage, and only raise the cap from behind to make application of subsequent dressings. Although my patients wore caps chiefly to protect the pillows, I incorporated the drug in collodion, proportion of one drachm to one or

two ounces, and this was painted on over the shaven scalp wherever patches of disease were to be seen, and renewed as often as it became loosened or detached. Perhaps the action is somewhat slower than when ointment is applied, but I could never convince myself that the benefit of shutting off the air, partially at least, from the diseased areas by the collodion was not of decided benefit in itself, because of the well known aerobic nature of the fungus. I will not enter further into the discussion of the merits of particular formulæ, since these questions will be considered by others, but my belief is that occlusion has much to do with the success of any plan. I realize that this is partially effected by certain pommades and plasters, but not so fully as by the collodion occlusive dressing.

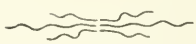
Should these cases be epilated?

Yes, if it can be done with proper skill, care and intellgence, and especially if the cases are few and the patches small, but, to start in to epilate several hundred children in whom the disease has manifested itself and secured the upper hand so to speak, the persons charged with the epilation being the ordinary hospital or asylum attendants, is a task much worse than useless.

To become a skillful operator the nurse must be of more than average intelligence and must be especially instructed in the work, so that new foci of disease are not established by the process.

In most institutions the safest plan is probably to cut the hair regularly, say once each week, with barber's shears kept well sharpened and constantly disinfected either by sterilization or by soaking in antiseptic solutions.

Clippers should not be used—for although they may with care be kept clean the probabilities are vastly in favor of their not being. It is probable that the disease has often been spread in asylums and schools by the use of this instrument, which has, I believe, been forbidden in the public institutions in France. Some cases are perhaps better treated if regularly sheared every week, but close clipping usually answers every purpose and the irritation of the hair root is not so marked.



ADENOID GROWTHS OF THE NASO-PHARYNX.*

By Samuel G. Dabney, M. D.,

Professor of Physiology and Clinical Lecturer on Ophthalmology, Otology and Laryngology in the Hospital College of Medicine ; Member of the Louisville Clinical and Medico-Chirurgical Societies, Louisville, Ky.

THIS little boy, aged 5 years, was brought to us a week ago by his mother for treatment. The symptom that attracted most attention was a profuse nasal discharge. The child is a mouth-breather, is anæmic and poorly nourished. Putting the finger into his mouth and carrying it into the naso-pharynx, I can detect an obstruction, which is soft to the touch. The tumor is not very large, but it interferes with proper breathing and causes a nasal discharge.

I shall pursue the usual treatment in this case and scrape out this growth. The method of operation is as follows : The palate is held forward with a retractor, and a part of the adenoid is removed with a cutting of forceps, and the roof of the naso-pharynx is then scraped with a curette. The operation is usually done under chloroform, but in this case we will operate without it. Much of the growth as it is scraped off is swallowed by the child, or spit out with the blood and debris, very little being removed intact, so that it can be shown.

I desire to speak especially about the manner of holding the child when the operation is done without an anaesthetic. The child is seated on the lap of an assistant, with its arms held down by pinning a towel around the body, its legs are held between the assistant's knees, and a second assistant, standing back of both the child and the first assistant, steadies the patient's head. The palate is now brought forward by the retractor, which is held with the left hand ; the larger portion of the adenoids is cut off with the forceps, and then with the curette the naso-pharynx is thoroughly scraped to remove all remaining portions of the growth. Most of it is swallowed or spit out. I present for your inspection a small piece, which will give you an idea of the character of the growth.

Let me urge upon you the importance of removing adenoid growths of the naso-pharynx. Their bad effects are manifest in the ear—more than half of the ear affections in children are thus caused; in the facial expression, producing the stupid open-mouthed physiognomy so often seen ; in the general health, retarding proper de-

* Abstract of a Clinical Lecture Delivered April 1, 1896, at the Hospital College of Medicine.

velopment and increasing the liability to disease of air-passages from the erroneous method of breathing, often in the intelligence, and in many other ways. Early operation should be advised in all cases, unless there is some strong contraindication.

Rapid improvement usually follows removal of adenoid growths, and the operation is very readily and quickly performed, and in most cases is best carried out under an anaesthetic.

HAEMOGLOBINURIA COMPLICATING MUMPS—DIPHTHERIA, *ALIAS* "WORM FEVER."

By W. Longworth Wainwright, M. B., B. S. (London).
Brixworth, Northamptonshire,
Formerly Resident Medical Officer, Evelina Hospital for Sick Children, London.

Haemoglobinuria Complicating Mumps.—I was called in to see a child in the early part of April of the present year, who was suffering, with other members of the family, from mumps. On the third day of the disease profuse hæmoglobinuria occurred and continued for seven days, and then absolutely disappeared. There were at no time any red blood cells in the urine and a very fractional trace of albumin, whereas the urine was like porter. On the eighth day neither albumin nor hæmoglobin were present, and the child has since been perfectly well.

Diphtheria, alias "Worm Fever."—I was asked lately to see a child whose mother informed me that he was suffering from "worm fever," and showed me his throat as a proof of her assertion. The throat was covered with diphtheritic membrane, and a cultivation showed the typical bacilli. No worms had been passed, and, on inquiry as to the origin of the name, I was informed that two years ago there was a great outbreak of similar sore throats, and, as a general rule, the sufferers passed a number of round worms. Two days later the child passed two dead round worms. The diphtheria was cured under antitoxin injections, and the child is quite well. I have since seen two other cases in which the same phenomena were manifested, the worms in each case being dead, which is unusual. I may mention that round worms are extremely prevalent in the district.

INCIPIENT HIP JOINT DISEASE.*

By James B. Bullitt, M. D.,
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A SHORT history of two cases recently seen, which suggested the paper I shall read this evening on the subject of Incipient Hip Joint Disease, may be of interest :

Case 1. The first case Dr. Cartledge was kind enough to refer to me, a little girl, who had a great many signs of hip joint disease. There was a family history of tuberculosis, and also the history of a fall. At that time there was considerable joint tenderness and restriction of motion. I understand it was from these symptoms mainly that Dr. Cartledge made the diagnosis of hip joint disease. At the time I saw her there was apparently no restriction of motion and very little tenderness about the joint. The child had been kept lying in bed ; there was no atrophy of the limb whatever, and I was inclined to think that she did not have hip joint disease. At my first visit I found the child lying flatly in bed, suffering very little pain. Two weeks later pain had increased, and was more marked than before, and restriction of motion in all directions was more manifest than it had been. I then came to the conclusion that it was, perhaps, a case of incipient hip joint disease. The disease had existed four or five weeks when I first saw the case. There was certainly a doubt as to the diagnosis. The parents were infected with the osteopathic fever, and have taken the child to Kirksville, Mo., where, if the disease be not hip joint disease, it is quite possible she will be cured.

Case 2. The second case I was asked to see by Dr. W. C. Dugan. The child had a good family history, no history of tuberculosis that could be elicited. The boy had a history of a fall. Of course, these histories are always to be taken *cum grano salis*, and are seldom to be considered as authentic. However, this boy had some marked symptoms of hip joint disease. There was joint tenderness and restriction of motion. Dr. Dugan's diagnosis was hip joint disease. He was sent home and put to bed, and two or three weeks afterward I saw the little fellow. At the time I saw him there was practically no atrophy of the limb and no tenderness about the joint, which led me to believe that the child was not suffering from hip joint disease, but had suffered a strain, as there was a

* Read before the Louisville Surgical Society.

history of slight local injury; and this had been cured by rest in bed. Dr. Dugan has since seen the patient, and has come to the same conclusion.

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The title of the paper is meant to designate the beginning, early stage of coxitis tuberculosa, the ordinary hip joint disease now universally recognized as being of tuberculous nature. In venturing to call the attention of this Society somewhat briefly to this disease, I can make no claim to anything either original or new; nor do I propose to discuss at all the treatment of hip disease. I wish to emphasize simply the importance and difficulty of making an early diagnosis, and further to discuss the prognosis, as regards length of time and functional results in such cases as come at the earliest possible moment under judicious and skillful surgical treatment. Brief consideration of the etiology and pathology of tuberculous coxitis is necessary to proper conclusions regarding these two points.

The relation the tubercle bacillus bears to the various tuberculous processes affecting the animal body, including osseous disease, has been so definitely and conclusively demonstrated that it is not worth while to make more than mention of it here. The etiological relationship of heredity and so-called "acquired diathesis" is matter of more concern to us.

As in all tuberculous diseases, so here family history plays an important role, as in a very large proportion of cases the history of tuberculosis in other members of the family can be elicited. Gibney lays great stress on what he has termed the "acquired diathesis." By this he means to designate bad surroundings, insufficient food, exhausting diseases, and the like, which seem to work in exactly the same way as heredity, rendering vital resistance less, and so predisposing to tubercular disease. Together with this reduced vital resistance, this predisposition inherited or acquired, trauma, local injury, acts powerfully in the production of hip disease. Gibney, one of the best and acutest observers, seems inclined to undervalue the importance of trauma; but a consensus of opinion is expressed by Lovett, who concludes that in about 50 per cent. of cases trauma plays an active part in furnishing conditions of soil where the circulating bacillus finds congenial conditions for growth and development. The classical experiments of Schueller are exceedingly interesting and instructive in this connection. Guinea pigs and dogs were rendered tuberculous by inhalations and injections of solutions containing tuberculous detritus from diseased lungs; the knee joints of each animal were then wrenched, or bruised. In a

great proportion of all cases so treated a typical chronic tuberculous synovitis of these joints occurred, while similar injuries to healthy animals caused no joint disease, nothing beyond a temporary strain or sprain. Trauma, local injury, therefore, when exercised on healthy individuals, or on predisposed individuals, where the tubercle bacillus is not present in the circulation, excites only acute and, as a rule, temporary joint lesions; but exercised on predisposed individuals, in whom the tubercle bacillus is present, serves as the exciting cause of chronic tuberculous disease. These, then, are the chief factors in the causation of tuberculous joint disease: an inherited or acquired tendency to tuberculosis in most cases as a predisposing cause, with a history of trauma, local injury, as a direct, exciting cause in about 50 per cent. of cases. In most of the remaining 50 per cent. of cases tubercular hip joint disease occurs, without the exciting local trauma, but in predisposed subjects; and in a small percentage of cases it occurs in children who have every appearance of perfect health.

Age.—As regards age, tuberculous hip disease is most apt to develop between two and ten years, seldom before two years and after eleven, and in the latter case almost always as a result of local injury. A vast majority of all cases occur between the ages of four and eight. It is important to keep this in mind in making a diagnosis.

Sex.—Boys are affected slightly more frequently than girls, which would be expected from the more venturesome, reckless ways of boys, exposing them to more frequent local injury.

We turn for a moment to the pathology of the disease: While in more ancient times it was believed the cartilage covering the head of the femur and lining the acetabulum was the starting point of the process, it is now known that this is practically always secondarily involved, and that the process begins in either the synovial membrane, which, it will be remembered, laps over only a small peripheral portion of the head of the femur, or in the bone; most frequently in the neighborhood of the epiphyseal line of the head of the femur; sometimes in the bone making up the acetabular wall. The relative frequency of synovial and osseous origin of disease is difficult of determination, for the reason that few cases have come early to autopsy, and later in the disease there is almost surely involvement of both synovial membrane and bone by extension of the process from one to the other, no matter in which the process may have started. As a result of the few early autopsies that have been made, and of the many excisions, the conclusion is reached that the process is usually osseous in its beginning, especially in children,

more frequently synovial in individuals beyond ten years of age. When osseous, most frequently it commences around the epiphyseal extremity of the femur, though sometimes in the acetabular wall. So far as symptoms go, it is practicably impossible to determine whether the disease be femoral, synovial or acetabular in origin. Sometimes the focus of disease is near the epiphyseal line of one of the trochanters; in such a case it becomes possible sometimes to definitely differentiate. "In the bone the first change to occur is a hyperaemia of the spongy tissues about the epiphysis, which is followed by the appearance in the center of this hyperaemic area of a small, grayish, translucent spot, which increases in size, and is surrounded by a zone of hyperaemia. It is probable this stage of the disease is caused by an infection through the blood vessels, that bacilli become heaped up in the capillary of an Haversian canal and start up an endarteritis, which results in a tubercle. The irritation of this process causes and keeps up the hyperaemia, which results in the process described as rarifying ostitis—that is, the trabeculae are absorbed in the hyperaemic area surrounding the tubercle, enlarged bone spaces are formed, and fatty degeneration of the bone cells occurs, with transformation of their contents to embryonal or granulation tissue.

"The earliest stage, then, seems to consist of a tubercle situated in an area of hyperaemic spongy bone tissue, which is undergoing the absorption and degeneration which result from prolonged hyperaemia. The gray spot continues to increase, and in its center becomes yellowish ; around it appear other smaller gray spots, which merge into it and hasten its destructive career. Softening occurs, with formation of pus, preceding which the focus has become a semi-solid cheesy mass, consisting of detritis, spicules of bone, amorphous matter and fat. The active destruction goes on at the periphery of the nodule, its growth taking place along the line of least resistance. Sequestration occurs, the necrosis occasionally extending a short distance into the diaphysis." (Lovett.)

The synovial membrane is thickened and succulent most often, and studded with tubercles, which extend even into the sub-synovial tissue. On the other hand, the tubercles may be present in a synovial membrane almost unchanged by inflammation. The effusion is generally copious and serous or sero-purulent ; the synovial tissue tends to granulation, and the affection shades into the common form of fungous synovitis. The synovial membrane becomes succulent and boggy; it encroaches upon and overlaps the cartilage and becomes adherent to it, and when separated leaves a bleeding,

corroded surface. The cartilage softens, a gelatinous degeneration takes place, and next the surrounding bony substance becomes involved. Returning to the initial osseous focus, the destructive breaking-down process continues in the line of least resistance, generally toward the cartilage covering the head of the bone, sometimes toward the periosteum. The cartilage is attacked, becomes soft and spongy, eroded, breaks down, when the joint proper is involved, together with the synovial membrane. When this point has been reached, when the cartilage has been broken through either from the side of the synovial membrane or from the primary osseous focus, the pathological picture is the same, and it is impossible to know which was the primary focus and which the direction of secondary invasion and destruction.

The specimen I exhibit very aptly illustrates the condition just described. The patient was a child aged five years, who came under my observation in December last, suffering from what was diagnosticated as hip joint disease. The parents said that was the first time the child had complained, and the first indication of disease they had noticed. The probability is, however, that it began sooner. Under mechanical treatment the child did very well, locomotion being, of course, more or less affected, but died some months later from an intercurrent attack of tubercular meningitis.

I dissected out the hip joint entire, which will speak for itself. No operation of any nature had been performed upon the child for relief of the hip disease. From the specimen it is plainly apparent that the original focus of the disease was near the epiphyseal line of the femur. There is a small abscess at one point; it appears to be about the insertion of the lesser trochanter. In dissecting the muscle back I found a cheesy mass, which evidently was at the expense of the bone. The specimen shows further that the ligaments are entirely destroyed. The cartilage is broken through, and the cartilage of the acetabular wall is likewise affected. In cutting through it was found that the bony wall of the acetabulum had been involved, evidently secondarily. The whole joint was practically disorganized, and as I have divided the bone you can see very plainly the original focus of the disease, I take it, which was in the internal epiphyseal line, extending both ways, upward and downward.

For our present purposes this is as far as we need follow the pathological process; what I wish to lay stress on is that, considering the nature of this process, whenever a diagnosis of tubercular ostitis of the hip can be made, it must be considered that a pathological process has so far advanced and of such nature as to preclude almost

the possibility of rapid arrest, no matter what manner of treatment may be employed. I say *almost*, because it could be recognized as possible, and probably does sometimes occur, that complete protection serves to limit the synovial tubercles or arrest the progression of the osseous destruction, and so in a comparatively short time complete cure may result. But this is certainly not the rule but the rare exception. Therefore, when one has failed to recognize incipient hip disease and the case has afterward developed into a destructive and perhaps fatal disease, the comforting thought can be cherished that perhaps the same thing would have occurred even had the disease early been recognized and the best possible protection furnished. Indeed, considering the frequent difficulty experienced in getting patients and parents to persist long and earnestly enough in carrying out a protective treatment, it would seem sometimes desirable to permit such symptoms to become apparent as would convince both surgeon and patient that the latter certainly and incontrovertibly had hip joint disease.

Early and efficient treatment, while it cannot be expected to bring the tuberculous process to a speedy termination, does serve as a rule to limit the destructive process, and by preventing great suffering and pain, and, later, deformity, places the patient in the best possible condition, combined with general and hygienic treatment for combating the disease. But if vital resistance has been so little as to permit the formation of tubercle, it is certainly unreasonable to suppose that joint protection is going to cause a speedy termination of the process. The experience of most surgeons fully bears out this proposition. Bradford and Lovett say: "It may be stated that from two to three years will probably be needed in the treatment of hip disease taken at an early stage." Thirty-nine cured cases reported by Schaffer and Lovett were several years under treatment, the shortest time being two years and the longest eight years. Considering, then, what has been said, it must be concluded that most of the cases, at least that have come early under treatment, before the symptoms and signs were such as to make the diagnosis patent to the most obtuse or inexperienced of observers, and have resulted in speedy and permanent cure, have in all likelihood not been cases of hip joint disease at all, at least not coxitis tuberculosa. This brings us to consideration of the difficulties of diagnosis. The scope of this paper prohibits anything like a full consideration of all the points involved in the differential diagnosis. Little more can be done than to merely mention the various affections which can be and have often been mistaken for hip disease, and

then, in conclusion, invite attention briefly to a few salient points which are most serviceable in early recognizing this by no means easily recognizable affection.

We have, then, strains or sprains of the hip as of other joints, acute arthritis, acute and chronic synovitis, gummatous ostitis, hysterical affections, neuralgia of the hip, sometimes of malarial origin, monarticular rheumatism, neoplasms; bursitis, inflammation of the bursae, connected with or in the neighborhood of the hip joint; loose bodies, arthritis deformans, and Charcot's disease. In considering the differential diagnosis of incipient hip disease many of these affections are at once self-eliminative. Before all things it must be remembered that tubercular coxitis is a disease characterized by *chronicity*, the cases occurring with an acute onset being exceedingly rare. Therefore, in practically all cases which can be recognized as incipient hip disease will be found a certain amount of atrophy of the limb, thigh and calf, dependent on trophic disturbance on the one hand, and on disuse due to instinctive protection on the other. This atrophy, in connection with certain limitations in the movements of the limb, more especially in the directions of *inward rotation, abduction and hyperextension*, are the symptoms most to be depended upon. When these limitations of movement are accompanied by pain on pressure in the groin and behind the trochanter, and by pain in the knee, especially pain referred by the patient, if old enough, to a point over the inner condyle, and at the same time when a small amount of atrophy can be determined, the diagnosis of commencing hip joint disease is comparatively safe. But where no atrophy is present, and the process has not demonstrated chronicity, the presence of pain alone and limitation of movement are insecure foundations upon which to base a diagnosis of incipient hip disease. It must be remembered these symptoms can be present as a result of a wrench or sprain, as well as in some of the other conditions already mentioned as affecting the hip joint. In such cases the safe course is to put the patient at rest in bed, and trust to time to make the diagnosis clearer.

DISCUSSION.

Dr. A. M. Cartledge: I know of nothing that gives the surgeon more concern than the early diagnosis of hip joint disease. The essayist has clearly outlined the conditions we so frequently find associated with hip joint disease in its early stages and the difficulties we encounter in making a diagnosis. Cases are indeed exceptional where injury develops any lasting pain unless there is some irritation from a tuberculous process. Where the injury has

been followed by very slight local manifestations, we are not justified in making a diagnosis of hip joint disease. In the case of a child who gets a fall not sufficient to give external evidences of a bruise, and still has marked evidences of involvement of the hip after a lapse of three weeks, the inference is that you have engrafted a tuberculous process at the point of lessened resistance. You then have an incipient tuberculosis.

Now there is a class of cases that are still more puzzling, and I have met with several of them. They are cases that we still have to class as hip joint disease in which they are not primarily tuberculous, and I believe the number of these is much larger than the statement of the essayist would indicate. There are a great many cases of hip joint disease that ultimately become tuberculous and pass into the category outlined in the paper, that are primarily cases of acute osteo-myelitis of the joint. I have had occasion to observe a number of cases of hip joint disease, beginning more or less actively, not so acute as we observe about the knee joint, of acute osteo-myelitis in which on the third day there was rather a pronounced feverish condition. The temperature was not taken at first, and the patient did not know how high it was, but it is safe to say that it ranged between 102 and 103 F. Many of these cases we see without any evidence of synovitis, the synovial membrane not having yet been involved, and the inference is in these cases that there is a pyogenic infection with no destruction of bone in the beginning, perhaps, later, with a secondary tuberculous infection, with limb atrophy, restriction of motion, etc., which the essayist has stated in his paper. I have seen a number such cases. These are the cases that give us early abscess. I believe the pathology of hip joint disease will have to be reversed slightly in many cases. Heretofore, many abscesses which we looked upon as tuberculous primarily, I believe to have been originally caused by pus germs. In time an osteo-myelitis may become tuberculous, just as we may have a secondary mixed infection elsewhere in the body. That gives us a new category. A case may be rapidly suppurative in the beginning, finally resulting in arthritis, and usually synovitis, but I have seen such cases with high temperature from the beginning with no synovial inflammation, and the only inference is that the trouble was originally an osteo-myelitis. I do not think we should attach much significance to trauma in these cases.

Dr. James S. Chenoweth: One point that has not been mentioned in the differential diagnosis of hip joint disease, and one that I have had called to my attention on one or two occasions

within the last few months, are the conditions of purpura and exudative erythema. I have seen two such cases in children, one especially marked, from Owensboro, Ky. The mother wrote me about the child, stating that the diagnosis had been made by one physician of hip joint disease, another spinal disease. It turned out to be a case of simple scurvy, with bleeding gums, an extensive purpuric eruption, edematous swellings about the limbs and enlargement of the epiphyses of the bones. Relief promptly followed change in diet and general hygienic measures.

I mention this as being a point that might sometimes be confusing in children.

Dr. A. M. Vance: The paper has certainly covered the ground very well. There is no question in the world but it is very difficult to make a diagnosis of hip disease in its early stages, and only those who have seen a great many cases, and are repeatedly and constantly handling them, can make it. The family history helps us out ; a tuberculous history on the part of parents or some of their children makes a point in the diagnosis ; and lately I have found another feature that ought to be taken into consideration, and that is the association of the child with tuberculous people outside of the family. I have had a number of cases recently where I was guided somewhat in my diagnosis by the fact that the children had tuberculous nurses, or had been in the same house with other families where people had died of tuberculosis. I believe that it is almost certain that children have tuberculous hip disease following trauma, if the children are associated with tuberculous persons. I do not think as a rule that weeks and sometimes even months cut any figure in the consideration of chronic tuberculous ostitis of childhood. Very few symptoms develop in weeks as a rule in ninety-five per cent. of cases. The first visit of a child with suspected hip joint disease is anywhere from six months to six years from the time symptoms really began. By a careful examination and questioning of parents you can usually find that the child has been ailing much longer than a few weeks, as a rule, before they apply to a doctor for treatment. The gravity is in proportion to the chronicity of the case, therefore I think acute osteo-myelitis is easily ruled out in most instances. Nearly all of these children who have a tuberculous ostitis have some atrophy before they come under the observation of the doctor. This is an important symptom, and the general reflexes and lessened joint motion are by far the most important features to be considered in making a diagnosis. The matter of shortening, and obliteration of the gluteal fold, and the sup-

posed lengthening, plays very little part. The tuberculous history or possibility of a tuberculous environment, with localized trauma, the reflexes and loss of motion at the hip with atrophy, are the principal symptoms that give us the diagnosis. It is very hard to explain just how we can make out the diagnosis. You can make it sometimes with only one prominent symptom. I have seen children with hip disease when only one symptom was present—loss of rotation. Flexion, extension, abduction and adduction normal, simply an inability to rotate the thigh. The vast majority of cases of tuberculous hip disease commence in the bone, and it is often six months before it reaches tissue that causes much exacerbation. I should say that in ninety per cent. of the cases occurring between four and ten years, it is from three to nine months before you get active pain in the joint. You get pain in the knee, you get atrophy, limp and night cries, you get all the other symptoms of hip disease before you get joint pain. I do not mean by that, pain which is due to wrenching of the joint, but pain that keeps the child awake at night and that causes the parents to bring it to the surgeon.

Dr. James B. Bullitt: What in your opinion is the efficacy of treatment in the early stages of hip joint disease, and especially conservative treatment?

Dr. A. M. Vance: The earlier treatment is commenced the better. I believe, in looking back over my cases, I can recall three or four where, in my opinion, there was present a tuberculous ostitis with all of the reasons for it, where the patients have become perfectly well. Particularly in two cases I know the children have become absolutely well where the treatment was commenced in the second stage. I have some others that were treated in their incipiency before I could positively state they had tuberculous ostitis, that have gotten well. I am inclined to think where they get well very rapidly, where early signs only are present, that the diagnosis is questionable.

Dr. W. O. Roberts: I agree with what all the gentlemen who have preceded me have said, that early diagnosis of hip joint disease, while very important, is frequently exceedingly difficult. I think, therefore, that all cases ought to be treated as though they were hip disease until the diagnosis is cleared up. In many of them nothing but time will clear the diagnosis.

Dr. W. L. Rodman: I simply wish to commend the essayist upon his most excellent paper. I think I am prepared to indorse every position he takes. Certainly the difficulties of early diagnosis are not only very great, but at times insuperable. I agree with him

that if the supposed cases of tuberculous ostitis yield promptly to treatment, that probably we are mistaken in our diagnosis. I also agree as to the pathology; my own experience has not led me to think that few if any of these cases begin as an acute osteo-myelitis; I think they are usually tuberculous from the first.

Dr. Louis Frank: A word or two as to the pathology of hip joint disease, and this emphasizes the point brought out by Dr. Vance: The family history of these cases, I should think, would be of the greatest importance, not only as to the direct family history, but as to the surroundings and associations of these children. We know that tuberculous troubles are not so frequently directly inherited as they are due to infection from associations. I should think in the great majority of these cases the tuberculous infection was primary, except in that class mentioned by Dr. Cartledge. I can readily see that probably we may have first an osteo-myelitis and a tuberculous trouble engrafted upon it.

As to treatment, I can hardly see how fixation of the joint could influence the growth of the tubercle bacillus; motion would of course to some degree necessarily increase the lesion and the inflammatory condition; but as to rest inhibiting the growth of the organism itself, which causes the trouble, I cannot possibly see how it could have any effect, and am inclined to think it would merely be a question of diagnosis.

KERATITIS XEROTICA.

By Sydney Stephenson, M.B., F.R.C.S.E.,
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KERATITIS XEROTICA (Feuer) appears to be a rare affection, especially amongst children. It is met with exclusively in those who by reason of grave illness lie for long periods together with imperfectly closed eyelids, so that the cornea becomes desiccated. For example, it may occur in the exanthemata, in cholera morbus or infantum, in meningitis, and so forth. It seldom falls under the notice of the ophthalmic surgeon, as most of the patients are lying literally at death's door when the condition sets in. It possesses, nevertheless, great practical importance; by simple means a physician aware of its nature can minimize its results, or even prevent it altogether. Its signs, symptoms and treatment should consequently be understood by every medical man.

The changes characteristic of keratitis xerotica are confined to the lower part of the cornea, which loses its natural lustre, gets coated with dried secretion, becomes dull, hazy and gray, and finally may ulcerate. The iris often shows signs of inflammation, as evidenced by blurring of its tissue, rigidity of the pupil and the formation of posterior synechiae. Pus in the anterior chamber is now and again present. The ordinary signs of inflammation are so badly marked that unless search be made keratitis xerotica may be overlooked altogether. If the patient live long enough the affection may go on to perforation of the cornea, escape of the aqueous humor and prolapse of the iris—a sequence of events likely to be followed by septic panophthalmitis. On the other hand, the cornea may heal, in which case a dense crescent of opacity will remain in permanent evidence. This is a condition that once seen can be scarcely forgotten. Lastly, the fact should be mentioned that this form of keratitis is nearly always bilateral.

While this, then, is the usual history of keratitis xerotica, the following case seems to show that for its production two factors, besides exposure of the cornea to air, come into play. These are: (1) A state of great debility on the part of the patient, and (2) the presence within the conjunctival sac of pyococci.

Catherine L—— had some congenital shortness of the upper lids, so that she habitually slept with her palpebral fissures open for, perhaps, 2 mm. In June, 1895 (being then 15 years of age)

she complained of difficulty in defecation, and it was found that diarrhœa alternated with periods of obstinate constipation. Moreover, a tender, annular growth, which bled readily, was discovered in the lower bowel. This was diagnosed as cancer, and inguinal colotomy was performed in July.

In March, 1896, ascites set in. The child suffered much pain, lost flesh rapidly, and her temperature was generally sub-normal. By the following month the dropsy had increased in amount, and oedema of the inferior extremities was likewise present. On May 2, the abdominal distension had reached such a pitch that paracentesis was performed by my colleague, Dr. Litteljohn, who removed about 1½ gallons of blood-stained serum. As the girl was semi-conscious, the operation was done without any general anaesthetic. On the same day it was noted for the first time that the lower sixth of each cornea was dull and grayish. There was a trace merely of redness in the corresponding part of the ciliary zone. A little stringy, yellowish-white discharge was present in the lower conjunctival sinus, as well as upon the surface of the cornea. There appeared to be no pain. After the removal of the secretion and disinfection of the conjunctiva, the eyelids were closed by means of a pad and bandage. Next day the left cornea presented at its lower part an oval, shallow ulcer, the edges and base of which were infiltrated. The corresponding part of the right cornea had not broken down, although it was gray, and its epithelium gave one the impression of being stippled, so to speak. The pupils were small and sluggish, but there was no actual evidence of iritis. The pad and bandage was replaced by narrow strips of adhesive strapping, with which the lids were brought into apposition. The patient became wholly unconscious on May 9, and died quietly next day. It is satisfactory to relate that perforation of the cornea did not take place; on the contrary, from the time when the lids were closed by plaster strips, the eyes showed signs of improvement.

A bacteriological examination was made both of the secretion taken from the eye and of the débris from the ulcer in the left cornea. Cover-glass preparations showed that the streptococcus pyogenes was present in large numbers. From the same source three organisms were cultivated: (a) the streptococcus pyogenes; (b) the staphylococcus pyogenes aureus; (c) a bacillus that turned out to be the bacillus subtilis. The last was found in one tube only, while the others were present in every tube inoculated.

The treatment of keratitis xerotica may be either preventive or curative. When a patient who is seriouly ill is found to sleep

with partially open eyelids, the physician should take care that they are brought into apposition so that they cannot be opened, with or without the aid of volition. This may be done in several ways. For instance, a carefully applied pad and bandage may suffice, or narrow strips of plaster may be used for the purpose. Another excellent plan is to fasten the upper lashes to the skin of the lower lid by means of contractile collodion. Five per cent. of celloidin, dissolved in equal parts of absolute alcohol and ether, sometimes answers even better than collodion. Before the lids are closed the conjunctiva should be disinfected by washing with a tepid solution of corrosive sublimate (1 to 4,000), and the process repeated daily. Should ulceration be actually present, the corneal lesion may be touched with a 3 per cent. solution of silver nitrate, or even with the *tinctura iodi* of the British Pharmacopoeia. After that the eyelids are to be closed, as in the first instance.

Butter from Sterilized Milk.—A machine has been invented by a Swedish engineer which will transform sterilized milk into butter in one minute. Not only is time saved, but the butter is made absolutely pure and free from germs. The milk is heated in the sterilizer to 160° F. From the sterilizer it runs into a churning chamber, where it is cooled down to 60° in its progress, by means of very small cooling frames, through which iced water constantly passes, and which revolves with the churning chamber at the rate of six thousand revolutions a minute. Several advantages are claimed for this remarkable machine, which bids fair to create a revolution in butter-making upon a large scale. In the first place, by sterilizing the milk, disease germs, if they are in it, are destroyed, as well as the microbes which cause putrefaction of the butter. The process of buttermaking is so rapid that there is very little chance of any germs that may exist in the atmosphere of the dairy getting into the butter, especially as all, or nearly all, air must be forced out of the chamber of the machine by the extreme rapidity of the movement going on inside. When the butter is once pressed, the possibility of germ impregnation is almost eliminated. Thus a wholesome and permanently pure butter is produced. Another advantage is that milk can be converted into butter directly after being obtained from the cow.—*Med. News, 1896, lxviii, 731.*

SURGICAL AND MECHANICAL RELIEF OF SO-CALLED HOPELESS PARALYTIC CRIPPLES.

By DeForest Willard M.D.,
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SCATTERED throughout the State are scores, yes, hundreds of individuals who spend their lives helplessly upon the floor or in beds, or who are extremely limited in their means of locomotion, and only move about on crutches. Many of them never see the outside world. Some of these cases are deformed from bone inflammations, but a large portion are deprived of locomotion by the results of various forms of paralyses.

Infantile paralysis and cerebro-spastic paralysis are the two forms most commonly met with. Anterior-poliomyelitis, with its resultant atrophy of certain sets of muscles, gives greater power to the opposing muscles, which, together with weight-bearing, results in various contractions at hip, knee or ankle, which may ultimately prevent the patient from walking, even if the muscular power is to a certain extent retained. This interference with locomotion is largely mechanical, and even an individual of strong, normal muscles would find it difficult to walk with limbs permanently fixed in false positions.

A man, having but two feet, is in a worse position than a quadruped ; weight-bearing being interfered with if a single supporting leg is affected. Man is a plantigrade animal and needs to tread broadly upon the sole of his feet to enable him to retain the erect position. The weight of the trunk must also be transmitted to the feet, in nearly a straight line. When this position is impossible the individual is necessarily rendered helpless. The first idea, therefore, should be to place the limb as nearly as possible in the normal position for sustaining weight, and every effort should be made to secure this condition. Until it is secured, no one has a right to say that a case is incurable or that locomotion is impossible.

Atrophy of the muscles may exist, but I frequently see the weakened muscles assert their power under the stimulating influence of motion and exercise. I have records of scores of cases who for years have been helpless upon the floor, and would have remained so to this day but for the surgical and mechanical help rendered them. Some of them have been made to walk unaided for miles ; others progress with the assistance of canes ; others on crutches or

by other aids to locomotion ; all such accessories are better than helpless confinement. Not only does locomotion add to the physical development, but it also contributes largely to the mental education and thereby increases knowledge. Faces upon whose lineaments had been stamped hopeless despair have, by the magic influence of hope, become bright and happy and the individuals are made useful members of society.

Even atrophy of the peri-articular muscles about the hip with contraction, though a serious condition and most difficult to deal with, ought not to be considered absolutely incurable, for surgical and mechanical measures can assist even this deformity.

If the arms are well developed and strong we can most positively expect good results, no matter how weakened are the lower extremities ; but where the polio-myelitis has been high up in the cord, and where the paralysis has extended to the upper extremities, of course, the difficulty is greatly increased.

In infantile spinal cases, however, the non-improvable cases are few.

In cerebro-spinal cases, of course, the benefit to be obtained will depend largely upon the brain power of the individual ; but a surgeon can, even in these cases, put the patient in a condition to secure the advantage of contact with the outside world. This acts as a stimulation and secondarily results in brain development.

All the theories of the neurologists can never discourage me when I see the results of my clinical work even in the most desperate and even idiotic cases.

The staggering, uncertain gait of the spastic, often with knees striking or actually crossed, with knees flexed and heels raised, is well known, but if the brain power is present no one need despair of securing a moderate amount of improvement, depending in degree upon the vigor of the cerebral cells.

The straightening of such legs and the sending of such individuals out into the educating influences of the world will daily expand the cerebral cortical cells, and improvement will always result.

Treatment.—Operative interference, as a rule, should precede any attempt at mechanical support. It is useless to inflict pain when simple and safe operative measures will in half an hour accomplish the result in a better manner. One need not fear that a limb will become weakened in consequence of operative measures; on the contrary, it will be stronger since the proper muscular equilibrium will be secured, and a limb with equalized muscular power must of

necessity be more serviceable than a limb in which one set of muscles is strong and another set weak.

The one operative rule to be followed is to divide all contracted tissues, whether muscular, fascial or ligamentous. This may be done either subcutaneously or by open incision. In the region of important structures it is safer to see exactly what tissues are to be divided, and with thorough asepsis a good result may be expected.

It is perfectly feasible subcutaneously to cut the tensor vaginae femoris and the origin of the sartorius and rectus, together with the fascia, without injury to any important structures; but if the contraction extends forward and surrounds the anterior crural nerve it will be safer to make an open section.

In extreme cases where the pelvis has been long tilted forward and the lordosis is very great, even section of the psoas and iliacus will not place the pelvis precisely in the normal line.

A longitudinal incision is better than a transverse one, as the straightening of the limb is apt to make a gap in a transverse wound.

In all these cases of extensive division there is liable to be a large space beneath the anterior spinous process which is difficult to obliterate. A cavity beneath the skin, even though filled with blood, is apt to give trouble, but by close suturing and the use of a large compress it can usually be obliterated.

For thorough stretching of the contracted tissue in front of the hip, the pelvis can best be secured by placing the patient in the prone position, but care must be exercised not to injure the abdomen by undue violence.

When the adductors are contracted, producing scissor or crossed legs, their division is easily accomplished subcutaneously. This subdermal method is decidedly preferable on account of the fact that in cerebro-spastic cases urinary soiling of the wound is common. To remove the puncture as far as possible from the genitalia, the skin of the thigh should be drawn toward the median line of the body, so that the puncture (which should be extremely small) shall, after recession, be nearly in the center below Poupart's ligament. The saphenous vein must, of course, be avoided.

This operation must be done under the most strict aseptic precautions, and the wound must be carefully covered and excluded from possible infection. The dressing near the genitalia should be covered with macintosh and held in place by adhesive strips or protected by shellac.

The best dressing for the retention of the limbs in abduction is

by fixing the knees by gypsum, then separating the limbs widely during the several weeks required for repair. Such dressing is also useful for keeping up extension on the divided tensor vaginae femoris and rectus.

When there is extreme lordosis, as is present in old cases of infantile paralysis, much can be accomplished by long continued extension downward from the legs and upwards from the head and shoulders.

At the knee in cerebro-spastic cases the tendons can be divided subcutaneously. In old cases, however, the contraction of the connective tissue is great ; it is often wiser to do the open operation to avoid the risk of injuring the vessels and nerves, although when the tendons alone are at fault the subcutaneous operation is preferable. If two or three longitudinal incisions are made, closure is much more easily effected than by transverse cuts, as the latter always gape when the limb is extended.

The worst cases to encounter are those where the patient has crawled upon the floor for years and have produced a partial posterior displacement of the tibia, together with an overgrowth of the anterior part of the condyle of the femur, producing an overhanging bony edge, that can only be overcome by partial resection of the knee. In some of these cases, however, resection is of advantage, as subsequent anchylosis and fixation of the knee does away with the necessity for apparatus and gives the patient a good walking member. I have operated upon quite a number of these cases for this purpose. In some cases only the cartilage is pared away from the anterior section, just sufficient to straighten the limb. It is then necessary to fix the leg in the descending position until anchylosis occurs. It is seldom necessary to wire the femur and tibia, as a rigid dressing of plaster of Paris is sufficient.

If the operation is cleanly done, no danger need be feared and primary union can be secured. The limb may be dressed in plaster of Paris, or a bracketed or a posterior splint may be applied.

At the ankle, in cases of infantile paralysis, tenotomy will be required ; usually the tendo-Achillis, the posterior and anterior tibialis and the plantar fascia, in equino varus ; and of the peroneals in valgus cases. In calcaneus, the shortening of the tendo-Achillis is occasionally necessary, with the subsequent employment of a stop joint. In adults the astragalus may require removal in stubborn varus, or the scaphoid may demand similar excision in particularly bad valgus.

In anchylosis, following inflammatory trouble about the joints,

tenotomy, forcible straightening, osteotomy and excision are all most serviceable.

Conclusions.—1. A limb, contracted at the hip, knee or ankle is mechanically unfit for locomotion, but if brought into a straight line with the body it can sustain the weight.

2. Surgical measures, tenotomy, myotomy, osteotomy or excision, are frequently required to accomplish this result.

3. Subsequent support by mechanical appliances is usually necessary, together with the temporary use of crutches, wheeled crutches, or other support.

4. By a judicious combination of these measures, a case having sufficient strength in the arms to assist in locomotion need not be considered hopeless.

Editorial.

LUMBAR PUNCTURE OF THE SUBARACHNOID SPACE.

THAT a prophet is sometimes deservedly without honor in his own country would seem to be proven by Hirt, who in his text-book on "Pathologie und Therapie der Nervenkrankheiten," referring to the cases of Wynter, in which paracentesis of the spinal canal had been done for the relief of intra-cranial pressure in meningitis, says that this procedure will scarcely find any imitators.

Yet, in the same year, Quincke, in discussing the symptom of hydrocephalus before the Tenth Congress of Internal Medicine, advocated this procedure, which he had performed in ten cases, not only on account of its diagnostic value, but because of the use that might be made of it therapeutically. Since the paper of Quincke this procedure has been adopted very widely both in Germany and in America, to a less extent, apparently, in Great Britain and France, so that to-day it may be said that it has, as Quincke prophesied it would do, taken its place among the recognized diagnostic methods in medicine. Its earnest application has been made in Germany, particularly by Fürbringer, and in this country by Jacoby, although abroad Lichtheim and von Zienssem had previously emphasized its value as a diagnostic procedure, and Browning had done the same here.

Fürbringer based his conclusions upon the analysis of 86 cases in which this little operation had been done. He followed the instructions as given originally by Quincke, and aspirated the spinal canal between the second and third, or third and fourth lumbar vertebrae, by the use of a Pravas syringe, and removed at a sitting as much as 110 ccm. by means of aspiration.

This experience of Fürbringer led him to lay great stress, too great we believe, upon the diagnostic importance of the operation, while therapeutically he considered it of but very slight service. He

was led to the former belief by the fact that in 37 cases of tubercular meningitis where it was employed, in no less than 30 of these was the presence of tubercle bacilli made out. The experience of others, however, has not substantiated the opinion that the examination of fluid obtained by such a paracentesis would have equal diagnostic value to the examination of the sputa of a patient suspected with pulmonary disease.

It would seem to be the consensus of opinion to-day, if we may change from the retrospective examination of the literature, that the operation advocated by Quincke has certain definite diagnostic value in a few conditions, namely, in serous meningitis, the meningitis serosa of German writers ; in tubercular meningitis, in septic and specific meningitis, and to a lesser extent in brain abscess, and to a very slight extent in such intra-cranial septic conditions, as sinus thrombosis. Its diagnostic value in intra-cranial growths, such as tumor of the brain, and the like, are very slight, practically nil. Up to the present day it has not been demonstrated that it has any therapeutic value whatsoever. Those who have tapped the lumbar canal and removed fluid in cases of congenital or chronic hydrocephalus, with the expectation of causing a decided amelioration in the symptoms or cure, have been disappointed, every one without exception. A priori, if the pathology of these conditions be understood, this is the result that will be looked for naturally. One may much more laudably entertain the hopes of curing the tubercular peritonitis, or the tubercular synovitis by aspiration than to cure a tubercular hydrocephalus by withdrawing the fluid from the spinal canal, and this even if a permanent drainage be kept, as has been suggested by some physicians. And, if a moment's consideration be given to the causation and pathology of congenital hydrocephalus, the idea of curing the disease by attacking one of the symptoms, which in all probability is purely compensatory, and therefore beneficial, is nothing short of ridiculous. Its therapeutic worth in meningitis serosa, we believe, is considerable, and in those forms of meningitis which are necessarily fatal it is of service, as suggested by Hubner, to mediate the headache, to prevent the severity of the convulsions, and in a general way to make the patient more comfortable than before.

In tuberculous meningitis not infrequently the prodromal symptoms are not only of long duration but are sufficiently characteristic to suggest the diagnosis. If puncture of the lumbar cord should reveal by the examination of the withdrawn fluid the presence of tubercle bacilli, in this stage, it is possible that measures might be taken which would prove inimical to the development of the disease. Although it has been pointed out by Quincke, Jacoby and others that the operation is very simple and devoid of danger, the experience of many others is apparently not in accord with theirs. Fürbringer has seen injury to the sensory nerves with resulting disturbance of sensibility. In another case there was persistent twitching of one extremity after the operation, while in another he came very near to puncture the aorta. In one case of brain tumor in which puncture of the lumbar canal was made, collapse and sudden death followed with great rapidity, and a similar outcome was his experience in three cases of uraemia.

Fürbringer believes that the little operation should not be done by the general physician, but only by one who has made himself accustomed to the operation on the dead subject, and has had experience on the living. Senator, however, whose experience has been very much less, and Jacoby, who at the time of his report had had an experiences of 35 cases, believes that the general physician should do it, and do it, we may say, on very slight provocation. But the number of cases that have been reported in which disagreeable consequences have followed, would lead us to believe that Senator or Fürbringer's advice is perhaps the safer one to follow.

In a recent paper Quincke, embodying the conclusions of his first paper and the experience gained since then, remarks that the Pravas syringe should be absolutely discarded, and particularly because in adult life the needle is not long enough (1 to 8 cm.). He again points out that the most convenient way to perform the operation is the lying posture, the patient lying on the side, with the thighs forcibly flexed, so as to make the lumbar spine convex backward, while in children the same results can be obtained by putting the patient on its abdomen across the mother's or the nurse's knee. In Germany it has not been the custom, apparently, to administer an

anaesthetic during this little operation, but in this country it would seem that patients were anaesthetized more frequently, and in fact in adult life it is probable that results will be more satisfactory if the operation is performed while under a moderate degree of anaesthesia. The question of attaching the aspirator to the needle after the stilet has been withdrawn is one that has provoked considerable discussion. Goldscheider is of the opinion that the aspirator should not be used, and we believe that this view cannot be too widely disseminated.

Although we are ready to believe that this operation has a definite field and should be adopted by the practicing physician, we are of the opinion that some recent writers have given an undue estimate of its value, particularly from a therapeutic standpoint, and have attached too little importance to the procedure, slight though it is. We cannot join with Jacoby in saying: "It will shortly form part of the routine work of every practicing physician." We sincerely hope that it never will, if by routine work it is meant that it should become as common as the hypodermic syringe, or the stethoscope, or the thermometer. No good can follow, and much injury may, the advocacy of entering a canal, which has such connections as the spinal canal, without due deliberation and indications.

As for its applications in such conditions as small focal lesions within the brain, in which there are no pressure symptoms, as we have seen it done, we cannot too severely deprecate such a procedure.

JOSEPH COLLINS, M. D., New York.

Society Reports.

AMERICAN MEDICAL ASSOCIATION.

(*Concluded from page 567.*)

Discussion Upon Chronic Ringworm of the Scalp.—In the Section on Dermatology, the question of chronic ringworm of the scalp in children was opened by Dr. L. D. Buckley, of New York. Only 2½ per cent. of the those affected, according to his statistics, were over thirteen years of age. Many cases go for years unrecognized, and consequently untreated, or without the proper treatment, thus remaining as sources of danger to all other children with whom they are thrown in contact. The diagnosis is not always as simple a matter as is generally supposed, some showing a single bald patch without marked characteristic features. Or, again, when a case has been of long duration, the patch may become covered with a growth of long hair, which hides the few broken shafts and the scaly surface by which a diagnosis would be made. The idea which often prevails that ringworm of the scalp is an easily cured affection is far from the truth. The average time of treatment is from three to six months, and some cases remain refractory to all attempts at cure much beyond this period. Time is often a most essential factor in the outcome. In view of this, we must accept reports of rapid cure with caution, and not be satisfied with the statement of the family physician that a given case is well after a short period of medication.

When the microsporon fungus is the one found to prevail, the case proves more obstinate than that in which the megalosporon alone is present.

Dr. H. A. Pulsford, of South Orange, N. J., had observed seventy-five cases in the New York Skin and Cancer Hospital. Out of this number twenty were discharged cured, after an average treatment of seven and a half months. Few have been so fortunate as Unna in seeing cases get well after two or three weeks, and Wickham reports that only 40 to 60 per cent. were cured after fifteen months. A case should not be recorded as cured until such a plan as that suggested by Wickham had been carried out. This observer has the hair cut and leaves the scalp undisturbed for a week ; he then cuts it again and leaves untreated for two weeks. If nothing is found then, after a further interval of two weeks, the case is put

down as cured, provided in the interim no spots have developed. Being a self-limited disease, stopping at puberty, reaching this age will cure when nothing else will.

Epilation must be very carefully done to be of any benefit, and indiscriminate pulling out of hair is futile, while epilation at the margin of the patch may, in the writer's opinion, be the means of spreading rather than checking the disease.

Such parasiticides were employed as bichloride of mercury; carbolic acid and iodine; croton oil and other irritants were used to set up an inflammation about the hair follicles. Naphthalin gave good results when used as an ointment in 20 per cent. strength. Two of the cases were cured after five and a half weeks' treatment. Veratrine in strength of 8 to 30 grains to the ounce gave two cures. Chrysarobin ointment was without apparent beneficial effect in a number of cases. The writer considers it powerless against the fungus, which is deep in the follicles. The most effective drug of all was found to be mercury.

Dr. C. W. Allen, of New York, spoke of **The Management of Epidemics in Institutions.** His paper will be found on page 171, this issue of Pediatrics.

Dr. Wolff, of Atlanta, Ga., agreed with the necessity for strict isolation of those afflicted and the measures suggested by Dr. Allen. He avoided epilation as the result of an extensive experience in institutions. The following formula he had found most useful:

℞ Chrysarobin, 5.
Ac. salicylic, 2.
Ichthyol, 5.
Vaseline, 88.

After this has been used for several weeks the following may be applied until all irritation has subsided:

℞ Pulv. Zinci Oxidi, 6.
Sulphur Praecip., 4.
Terra Silicat, 2.
Adipis Benzoat, 28.
Mix.

He had seen cases persist for two years and many of his own had lasted eleven months. He had experienced the same difficulties in securing proper co-operation from the managers of institutions as had been referred to.

Dr. Hutchins, of Atlanta, Ga., said that in one case which was well after three months' treatment, he had used kerosene in which bichloride of mercury was dissolved in strength of one to

four grains to the ounce. After a time this had been changed to ichthyol and salicylic acid in zinc ointment or benzoated lard.

Dr. Schwartz also thought epilation at the margin of the patch favored spreading. Formaldehyde, which is a germicide and is very penetrating, he thought might be used with advantage. Pyrogallic acid and mercurials had been found too astringent.

Dr. Ravogli, of Cincinnati, Ohio, found nothing better than the modified Wilkinson ointment, rubbing it in twice daily. After this course, a two per cent. carbolic solution in alcohol is applied at frequent intervals. His results had been all that could be desired. He never inscribed cases as cured unless microscopic examination made two weeks after a seeming cure confirmed it.

Dr. Brayton, of Indianapolis, Ind., said that instead of cutting or epilating with forceps he had employed an epilating paste made by passing for an hour or two a stream of sulphuretted hydrogen gas through a thick creamy solution of freshly slacked lime. This eats off the hairs considerably below the surface and he thought it would prove far superior to attempts at extraction.

Dr. Gilchrist, of Baltimore, Md., said that such simple substances as soap had been found to check the development of ringworm spores in the laboratory. He had observed much ringworm among colored children. Clinically, the appearance in these persons is that of a dry seborrhoea rather than of ringworm as we see it in the white skinned race. Here the microscope is at times indispensable. The curled hair seems to break off less and the stubs show less plainly. It seems that chronic scalp ringworm is very common among the blacks in and about Baltimore. Treatment is very unsatisfactory. The deep penetration into the epidermis explains the difficulties of rapid cure quite as much as the extension of the fungus into the follicles.

Dr. Bulkley agreed that clippers should be boiled, but if the boiling is done in a soda solution and the instrument then dried in the oven, they are then no more objectionable than shears. Shaving as well as epilation may be accountable for spreading. Broken hair shafts may not be present in a given case, so all children entering institutions should be examined for scaly patches.

Dr. Hutchins said he agreed with Dr. Allen's views regarding the soil, which often has to be changed by internal treatment before the disease will keep down. With this end in view, he institutes rigid dietetic and therapeutic rules.

Dr. W. L. Allen, of Davenport, Ia., said that he had recently treated eighty cases in an institution with a 1½ per cent. solution of

bichloride combined with the biniodide of mercury. After a year's treatment only six remained uncured. In other cases, after washing with green soap, thirty grains to the ounce of bichloride was applied cautiously. The effect of this varied greatly, and in a few instances was escharotic, and one death was attributed to mercurial poisoning. Newly-admitted children show evidences of the disease on an average of six weeks after admission. One-half of the patients are girls.

THE LOUISVILLE CLINICAL SOCIETY.

Intussusception.—Louis Frank: My reason for reporting the following case is because of the rarity of the outcome of such a condition. One week ago to-day I was called to see a child, aged eight months, with the history of repeated vomiting in the morning. The vomited matter consisted largely of curds mixed with bilious looking matter. The bowels had not moved that day. The abdomen was distinctly and exquisitely tender; the child was quiet at the time, though it had been restless. Small doses of calomel, followed by a saline the following morning, was ordered.

The next morning the child was restless, with an anxious countenance, and seemed to be in pain. The mother had not fed it, following my directions, but the vomiting still persisted. The bowels had moved three or four times during the night, the stools consisting mostly, so the mother said, of pure blood. The abdomen was not distended but it was tender and the muscles were rigid. On the left side, low down, a sausage-shaped tumor was present, such as we usually find in intussusception. The diagnosis of intussusception was made and an operation advised. The mother hesitated, and Dr. Carl Weidner saw the case and concurred in the diagnosis. An examination per rectum distinctly showed the invaginated bowel extending possibly an inch; we could feel all the way around the invaginated portion. There was not much bleeding, and I took it to be a favorable case for an operation. I explained this to the mother, but she refused to have anything done, and I withdrew from the case. Another physician looked at the child and told the mother that it would die within three or four hours and left. The family then held a "council of war" and decided to try the efficacy of prayer. Two or three seances were held the following two or three days, and the child rapidly improved.

DISCUSSION.

Carl Weidner: The case, as reported by Dr. Frank, is an interesting one to me. The question is whether the child has re-

covered, and if so, in what manner ; whether the bowel has sloughed, or whether it has been relieved spontaneously. I will admit the possibility of a mistake in diagnosis being made at any stage of intussusception, but in this case a very careful examination was made ; the child had been bleeding considerably, and had been lying in bed for thirty-six hours with evidences of intense pain ; the *invaginated portion of the bowel could be plainly felt by the rectum ;* all symptoms were typical, and I hardly see how a mistake in diagnosis could have been made. It seemed to be a favorable case for operative interference.

P. Guntermann : Intussusception in babies is a very difficult matter to determine. If the child gets well, unless the bowel sloughs out and shows itself, I would rather consider it as a mistaken diagnosis. It is not uncommon for children to have slight hemorrhage from the bowels from other causes than intussusception, and if the child recovers without a surgical operation, unless the bowel actually sloughs out, I would be inclined to think the trouble was due to other causes than intussusception.

Louis Frank (continued report) : The case reported to this Society at its previous meeting was a case of intussusception and has since died. The exact symptoms I have been unable to ascertain, but from a description given by one who was present, I am inclined to the belief that the child died from perforation and collapse. The bowels had moved, the stools consisting of bloody mucus with a grumous material and slime. The child was much emaciated and there was continued restlessness and pain, with occasional attacks of vomiting. No physician saw it between the time of last report and time of its death. Notwithstanding that pressure was brought to bear upon the family an autopsy was not obtained.

We know that these cases, as has been said, do sometimes get well ; they may get well by adhesions occurring between the intussusceptum and the intussuscipiens, the slough separating and being passed out, or cures may take place by spontaneous return of the invaginated gut. However, such methods of cure are rare, and operative interference is preferable to such an expectant plan.

I believe that in this case adhesions had taken place, the invaginated bowel sloughed out and that the case had practically gone on to recovery so far as the intussusception itself was concerned, but that later, the bowel becoming loaded with fecal matter, rupture took place at the point of adhesion. I believe that had the case been under the care of a physician, with the gut in the condition it was after the invaginated portion had sloughed and passed out, it would probably have recovered without operation. Operation, however, is to be advised in all cases of intussusception as otherwise death is the usual termination.

Abstracts.

TUBERCULOSIS OF THE SUPERFICIAL GLANDS.

Dr. De Forest Willard discussed, at the May, 1896, meeting of the American Surgical Association, the subject of tubercular infection of the superficial glands, and stated that the face and neck, being largely exposed to slight traumatisms and eruptions, and but slightly protected by a thin epithelium, furnished a fertile infection-atrium.

He described the course of the lymphatics in their course to the superficial and deep glands. A lymph node is the first filtration station against the invading bacilli, and in many instances is able either entirely or largely to repel the attack. Failing in this, a chain of glands becomes infected, the amount of damage done varying with the character of the poison received, but being especially modified by the resistive power of the individual. This resistive power is markedly modified by personal habits, by the inherent power of cells derived from ancestry, and by temporary conditions; both post and pre-natal conditions enter largely into the question of resistance.

Destruction of micro-organisms may result in caseation, but the spores, though latent, retain their infecting power for a long time, and ultimately affect the general constitution.

A tubercular infected gland is a constant menace to the constitution, and watchfulness on the part of the guarding element is the only hope of escape. Removal is the safest and surest means of getting rid of this dangerous focus.

The operation of excision in the neck frequently becomes a most formidable one, owing to the presence of the large vessels and nerves in this region. Exposure should be free. In the superficial area removal of the infiltrated surrounding connective tissues should be practiced, but in the deep structures the line of capsule cleavage surrounding the glands should be closely followed. The facial nerve should be carefully avoided. Should it be injured, it should be sutured at once; but even suturing will sometimes be followed by the most annoying paralysis. Care should be exercised as to the pneumogastric and phrenic nerves; they should not even be lifted from their beds if this can be avoided. A blunt pair of scis-

sors and a blunt dissector to sever the adhesions will in the deep tissues render great service. Injury to the large veins should be followed by lateral suturing or ligation.

When enucleation has been practiced and a clean sterile wound secured no drainage is required. When there has been extensive suppuration it is better to drain until the first or second dressing.

In old suppurative cases complete excision is impossible, but partial excision and curetting will remove sufficient material to enable nature to conquer the remaining infiltrated cell elements, if such operation is supplemented by hygienic measures.

Should infection of the glands which have escaped at first operation take place success may be secured by repeated efforts.

In cases which refuse operation incision and curetting may finally accomplish a cure, although the treatment will be tedious.

Iodine used internally and applied to the granulation tissues externally is most useful, but the form of stimulation to sluggish granulations must be changed from week to week. Iodine is more vigorous than iodoform. Internal medication, good air and food are absolutely essential in both operative and non-operative cases.

Extensive suppuration sometimes is useful in destroying bacilli, and gives the system a chance to rally, but after a long trial of both operative and non-operative plans the author is satisfied that cases not subjected to operation have become tuberculous, or have died in far larger proportion than those from whom the glands have been removed.

A trial of sero-therapy was advised.

DIPHTHERIA ANTITOXIN IN AN INFANT FIVE DAYS OLD.

Koenig and Moxter (*Zeitschrift fur practishe aertzte, 1896, No. 1*) were called to a child, 4 years of age, on July 2, who was suffering with diphtheria of the throat of five to six days' duration. A full dose of Behring's serum No. 3 was at once injected. Rapid improvement followed, and in a few days the membrane was thrown off, and convalescence was soon established. On July 17, the mother had given birth to a healthy boy baby, which had been allowed in the room with the sick child up to the time the doctors were called. It was a bottle-fed infant. On the 22d of July the baby was reported ill, pharynx was reddened, tonsil of right side swollen, and a diphtheritic spot the size of a lentil was visible on its anterior surface, surrounded by a reddish zone. The authors decided on treatment by antitoxin. Injection of Behring's serum No. 4 was made into the right thigh,

the quantity being 1.5 c. cm. Next day there was no reaction to be noticed at site of puncture ; the child was quiet and took its milk ; the membrane was still present, but had not increased. On July 24, there was little left of the inflammatory signs, and these only in the immediate neighborhood of the much-diminished membrane. Two days later the child was perfectly well.

REDUCED PERIOD OF INTUBATION BY THE SERUM TREATMENT OF LARYNGEAL DIPHTHERIA.

EDWIN ROSENTHAL (*M. & S. Rep., 1896, lxxiv, 671*) concludes, after using the serum treatment the last eighteen months, as follows:

1st. The duration of intubation varies.

In the cases quoted, extubation had been made in from one-half to 408 hours. The rule, however, in the majority of cases had been that final extubation can be performed within 120 hours.

2d. The average length of intubation has been reduced to a marked degree.

EUROPEAN OBSERVERS.

Bokai	18	hours.
Von Ranke	$25\frac{1}{2}$	"
Huebner	63	"

AMERICAN OBSERVERS.

O'Dwyer	67	hours.
Fischer	$68\frac{1}{10}$	"
Rosenthal	$71\frac{1}{6}$	"

3d. The operation of tracheotomy is avoided, intubation being sufficient to cure even the long cases (five days and over), and there were no symptoms necessitating such a procedure.

4th. The use of serum has placed intubation on a definite basis by

(a) Lowering the mortality.
(b) Shortening the period of intubation.
(c) Avoiding the major operation of tracheotomy.

WHEN SHALL ALCOHOL BE GIVEN TO CHILDREN?

GROCZ (BUDAPEST) (*Centralblatt für innere Medicin Vol. 17, No. 21*) warns against the abuse of giving children wine or brandy in an unsystematic way and in reckless doses, as also against the early use of alcoholic beverages. Besides reporting two cases of acute alcoholic intoxication, which evidenced itself in a comatose condition and severe tonic and clonic convulsions, he mentions severe dyspepsias, cases of epilepsy and chorea as the sequel of an

early abuse of alcohol. A certain number of neurasthenic conditions in children are to be traced to it. There are only two effects of alcohol to be made use of therapeutically—namely, its stimulant qualities on the heart and as a preserver of tissue. In its first property it may be a direct saver of life, in cases where a sudden collapse of strength and rapid heart failure makes its appearance; also in acute infectious diseases, in the collapse of infants suffering from intestinal troubles and in great loss of blood. As a conserver of tissue it may be given in chronic complaints which have a tendency to gradually weaken the system (rhachitis, tuberculosis and scrofulosis.) As a general rule the principle should be adhered to that alcoholics be only given children for therapeutic purposes, and exclusively for the above indications.

A CASE OF LARYNGEAL DIPHTHERIA OF GRADUAL ONSET IN A TWO-YEAR OLD CHILD—INTUBATION; COMPLICATED BY HERNIA OF RIGHT LUNG DUE TO PARTING OF THE FOURTH RIB FROM THE COSTAL CARTILAGE—RECOVERY.

J. Madison Taylor (*Phila. Polyclinic, 1896, v, 232*) reports this case: A small mulatto girl, of two years and three months, came to the Polyclinic Dispensary suffering from laryngeal cough, with cervical adenitis, and received treatment for several days, growing steadily worse; dyspnea became extreme, and Dr. Freeman performed intubation most successfully. The child slept at once and improved steadily, although the cough continued severe. The tube was removed on the eighth day, and all seemed well. Two days afterward the cough grew much worse, laryngeal stenosis increased, and it was feared that the operation would need repetition. The symptoms then were a marked prominence over the upper part of the heart, a hernia of the lung, 2 inches vertically by 1⅝ laterally, over the junction of the fourth rib. This prominence grew less or more with each act of breathing, and it was estimated that the distance between the rib and cartilage was from one-half to three-quarters of an inch. Breath sounds over this prominence were clear, exaggerated vesicular resonance.

Lungs.—Right: Vesicular resonance exaggerated, bronchial breathing in places, percussion higher pitched than the left. Left: Clear vesicular resonance, slight moist rales, cavernous percussion lower pitched than the right. Klebs-Loeffler bacilli were found abundantly early in the case, and in the tube when removed; none

was found afterward. There was good recovery. The hernia was strapped with rubber plaster.

ROENTGEN SKIAGRAPHS OF CLUB FEET; DEFORMITY OF THE HAND; TUBERCULOSIS OF THE KNEE, Etc.

Dr. De Forest Willard presented at the May, 1896, meeting of the American Orthopaedic Association skiagraphs of a pair of club feet of a boy six years of age. The skiagraph was taken especially to delineate the width of the astragalus and decide whether it could be replaced between the malleoli without tarsectomy.

The results give a clear outline of the deformity and demonstrated that replacement was possible, and subcutaneous section of all the contracted tissues proved the correctness of the diagnosis.

The radiograph showed most beautifully the cause of the internal obliquity of the metatarsals and their relation to the tarsus in cases where the foot has been walked upon for years. The 2nd, 3rd and 4th metatarsals were actually dislocated inward so that they overlapped to nearly half of their diameter. They were widely separated from the 1st metatarsal, which had become also partially dislocated toward the inner side of the foot, its relation to the cuneiform being greatly altered.

This condition showed plainly the serious obstacles to be overcome in the correction of this difficulty in old cases of varus, and confirmed the necessity for early treatment. These cases should never be allowed to walk except upon the sole of the foot. The epiphyses of the bones of the leg and foot were most beautifully delineated.

The next skiagraph was taken from a child three years of age, who possessed five tiny protuberances in place of fingers at the end of the metacarpal bones; viewed externally the bones of the carpus and meta carpus were normal, but under the action of the Roentgen rays, which clearly disclosed the bones of the forearm, the hand was found to consist only of cartilaginous pieces which may or may not ossify later. The skiagraph also showed the difference in the density of the muscles and of the subcutaneous fatty tissues.

Another radiograph was taken from a man, thirty-eight years of age, who had suffered with slow, tubercular inflammation of the knee for nearly two years. The condition had been quiet for a year and the shadowgraph was taken for diagnostic purposes to decide upon the safety of cautious attempts at manipulation. The antero-posterior view showed the outlines of the tibia and femur clear, smooth and distinct. An attempt was accordingly instituted under

ether and the knee flexed to a right angle. No inflammatory symptoms followed the operation. The operation will be repeated.

The second skiagraph was taken of a tubercular knee which had become anchylosed without suppuration for the purpose of deciding whether it was safe to undertake operation for the restoration of motion.

The two skiagraphs brought into marked contrast the two stages of bone destruction which goes on in cases of tubercular disease. The patient had had symptoms of tubercular ostitis for ten years, and the limb had become fixed in the straight position.

The shadow view anteriorly showed marked erosion not only in the condyle but throughout the whole articular surface of the femur and tibia. Laterally the erosion of the bones was very marked. The patella was also found to be fastened to the femur by a bony growth. Partial posterior displacement of the tibia was also evident. Destruction of the joint was very great, and the attempts to secure a movable joint were abandoned lest further inflammatory trouble should be awakened.

Dr. Willard thought that the use of these rays for the purpose of diagnosis and treatment would soon be of the greatest value.

SEQUALAE OF INJECTIONS OF DIPHTHERIA ANTITOXIN.

Sevestre and Mery (*Wiener Medic. Wochenschr, Vol. 46, No. 20*) say that the occurrence of urticaria-like wheals, which make their appearance soon after the injection, is already well known, and is of no great importance. Less frequently, but more severe, are a number of symptoms which make their appearance some little time after the inoculation. Between the eleventh and fifteen day—more usually on the thirteenth day after the injection—fever and vomiting was observed. Soon after, pain was experienced in one or more of the joints. A polymorphous exanthem, resembling that of measles or scarlet fever, gradually extended over the skin, either alone or in conjunction with the urticaria-like eruption. The patient becomes very restless, delirious, and sleep is disturbed. Albuminuria frequently recurs. In exceptional cases an erysipelatous eruption was found at the site of puncture, or on other parts of the body. After three to five days these appearances vanished, and a feeling of lassitude only was left. These symptoms should not be considered as directly due to the antitoxin, as they do not make their appearance in uncomplicated cases, and are only observed in that form of diphtheria complicated with a streptococcus infection. Injections of

Marmorek's serum checks these symptoms, either altogether, or they occur in a lesser degree. It seems likely that the injection of the serum acts as a causative stimulus on the streptococci present in developing these symptoms.

TREATMENT OF POST-SCARLATINAL DROPSY IN CHILDHOOD.

F. Schmey (*Allgem. Medic. Central. Zeitung, 1896, No. 1*) has for ten years followed successfully the plan here given in numerous cases. The child is wrapped from head to foot in a wet sheet, then tightly wound in a woolen blanket. The patient now receives every hour a teaspoonful of Syr. Jaborandi (Preparation: 0.3 grm. fol. jaborandi are heated in a steam bath with 20 grm. water for ten minutes, the strained liquid filtered and 10 grm. of sugar dissolved in it by boiling) until free perspiration takes place. Only then is he freed from his coverings. This is to be repeated daily until the oedema has been removed, which usually is effected within two to three days. There have never been any annoying consequences. In children over fifteen years old, he gives pilocarpine hypodermatically, and places the child in a hot bath before packing in the sheet.

ON THE TREATMENT OF WHOOPING COUGH BY PHENOCOLL HYDROCHLORATE.

A. M. Vargas (*Therapeut. Wochenschrift, Jan. 5, 1896*) has used every medicine and procedure that has until now been recommended, but in no instance has he seen such a rapid and notable effect on the cough as with phenocoll hydrochlorate (amidoacet paraphenetidin), whose action is a marked one, not only as regards the intensity and number of cough paroxysms, but also on the duration of the disease. Indirectly this treatment has a beneficent influence on the dangerous complications often meet with in this affection. After trials by Tripold and Modigliano, Dr. V. began using this drug in doses of 1 to 2 grms. in twenty-four hours. He reports the following case: In a family of four children, the oldest, a girl of seven years, caught the disease and infected her younger brothers of six years, four years and eleven months. All four children of the family often had their paroxysms of cough at the same time, and the number of attacks frequently reached 20 to 24 in a day. Chloral, belladonna, bromoform and quinine were given the three older children. The youngest was given phenocoll in mucilage, the dose being 0.15 grm. every two hours. Within twenty

hours the paroxysms had diminished in frequency and number. The mother seeing the good effects, gave the older children the same remedy of her own accord, as she saw no good effects from the other remedies prescribed, and soon a noticeable improvement also occurred in these.

Between February, 1894, and June, 1895, the author has successfully treated 42 cases.

The dose of phenocoll is from 0.07 grm. to 2 grms. daily. It was usually given in mucilage, or in a watery solution, as it is soluble in 17 parts of water. The action of phenocoll in whooping cough seems to be in checking directly the convulsive character of the cough. Within six to twelve hours this effect begins to show itself, and in 24 hours is plainly seen. During the first two weeks, however, this effect is only a passing one, for on leaving off the remedy the paroxysms would gradually return, and a permanent cure was only produced after exhibiting the drug again.

It seems without doubt that there are two factors at the basis of whooping cough, a bacterial and a nervous one. The former probably is the primary cause on which the other is grafted. The visceral complications are to be looked on as secondary symptoms, produced by changes in the blood vessels. Just so are to be considered the later infections by strepto, staphylo and pneumo cocci. Phenocoll does not act as a germicide in whooping cough, but as a sedative to the trigeminus and the laryngeus superior. Lastly, the writer makes an energetic protest against the air treatment of whooping cough. His objections are that the child does not receive the necessary rest which is needed to its recovery, and lung complications are very apt to appear, owing to the change of temperature to which it is exposed. A second great danger is the impossibility of isolating the child under the latter treatment. If stringent measures are necessary for the prevention of the extension of measles and scarlet fever, it certainly seems logical to prevent infection from whooping cough, which has as high a mortality as typhoid, and in some countries even a greater mortality than measles.

The following conclusions were arrived at:

1. All therapeutic means against whooping cough had the object in view to prevent the mechanical disturbances of the great blood vessels produced by the cough, they being the source of the brain, lung and bowel complications.

2. Amongst all the different local, sedative, hypnotic, bactericidal or toxic remedies which were used, not one, with the exception

of phenocoll, has reduced the intensity and frequency of the paroxysms as well as of the complications.

3. In all of the 42 cases treated with phenocoll, the good results were noticeable within 12 hours ; in some cases the number of the paroxysms was reduced only on the following day.

4. Even in very young children, and in complicated cases, this remedy produced neither nausea, nor vomiting, nor collapse, nor any other disagreeable consequences. The best way of administering phenocoll is in a solution of gum arabic or simple water, the dose being 1-2 grm. a day. It is very quickly excreted, beginning within 20 minutes after taking, and within 15–20 hours completed.

5. The action of phenocoll seems to be confined to reducing the number and intensity of the attacks, acting as a sedative and not as a bactericide.

6. The open-air treatment of whooping cough is to be condemned on account of its uselessness and danger.

TWO CASES OF SUBCUTANEOUS EMPHYSEMA DURING INTUBATION.

Bauer (*Jahrbuch f. Kinderheilkunde, 1896, xli, No. 1*) reports two cases. These two cases are taken from 800 cases of intubation in Bokai's Kinder Krankenhaus. The ulcerating of the wall of the trachea could not have been the cause of the subcutaneous emphysema, for the reason that the final extubation was easily accomplished, which is never the case in the imbedding of the tube. Besides, the tube did not remain longer than two to three days in the trachea, while to produce an imbedding four to five days are necessary ; lastly, a very deep depression produced by the tube is a very rare thing.

Undoubtedly the complication during intubation was produced through an alveolar rupture, which often happens when expiration is in a high degree labored, or the inspirations are made very vigorous. In the first case, there were frequent attacks of suffocative dyspnœa, with noticeable flapping of loose membrane, followed suddenly by a severe paroxysm of coughing, during which the tube was expelled, and following it a membranous cast 10 cm. in length, showing the first and the second branchings of the bronchus. On the following day the emphysema made its appearance. Hence the membrane, loosened by the tube or otherwise, by partly occluding the lumen of the tube with every expiration, caused such paroxysms of cough that the tube was forced out. The coughing up of the rather heavy tube—blocked by the pseudo-membrane—may have

caused such an air pressure on the lung tissue that a rupture might easily have occurred. Still easier might the emphysema have been produced in the first case, where, on account of a previous pertussis, the alveolar wall must have lost some of its elasticity; in this case, too, the tube was expelled during a severe coughing spell, its lumen occluded by a thick pseudo-membrane.

REPORT OF SIX CASES OF DIPHTHERIA.

Alfred Whitehead (*Maryland M. J., 1896, xxxv, 147*) reports six cases of laryngeal diphtheria, all of which recovered after the use of diphtheria antitoxin. Three required intubation of the larynx. In no case was the diagnosis confirmed by bacteriological examination.

ON THE MICRO-ORGANISM OF MEASLES.

J. Czajkowski (*Centralbl. f. Bacteriologie ü Parasitenkunde, 1896, xviii, No. 17-18*), referring back to his published experiments in 1892, reports a number of recent investigations which he believes led him to positively find and cultivate the bacillus of measles. During four epidemics, he examined the blood of 56 patients, of which 37 specimens were subjected to only a microscopical examination, while in 19 cases cultures were also made. He found, corroborating Cannon and Pielicke, rather thin bacilli of different lengths (0.5 u up to the size of the diameter of a red blood-corpuscle; in older cultures there are found besides "long threads"). In the suspended blood-drop the micro-organisms are seen extra-cellular. They are stained by all aniline dyes, although irregularly so. The cultures thrive in different culture mediums, not, however, in gelatin and agar. An addition of blood or Hommel's haematogen facilitates their evolution. In a solid culture medium the cultures appear on the third or fourth day, in form of tiny dew-drop colonies, which run together and appear under the microscope as transparent drops without a skeleton. Most fortuitous for the development of the measle bacillus is a fluid culture medium (bouillion, or sterilized serum from the abdominal cavity). The cultures here appear as a heavy sediment, in its younger stage of a white, in older stages of a yellow grayish shaded color. The bacilli thrive at the temperature of the blood; whether they are affected by other temperatures was not tried. Rabbits are immune to this micro-organism; mice die on the third or fourth day of septicaemia from a subcutaneous injection. From the blood, spleen and liver the bacillus could be recovered in pure cultures.

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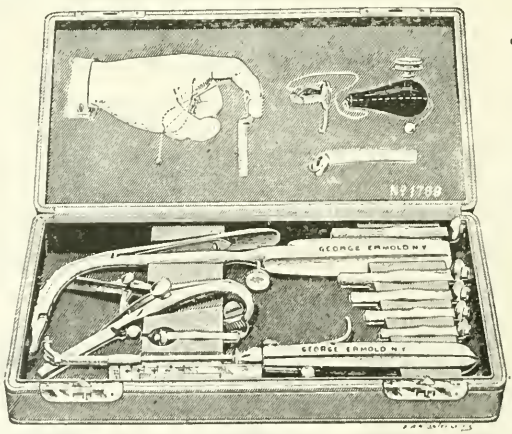

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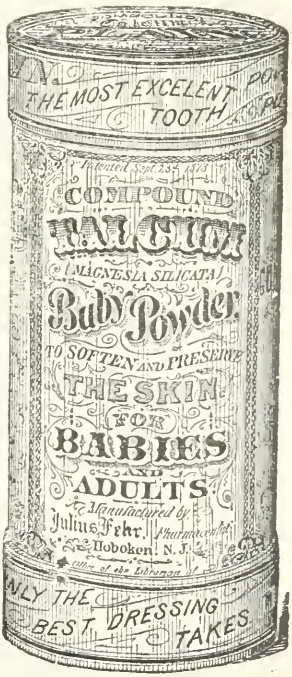

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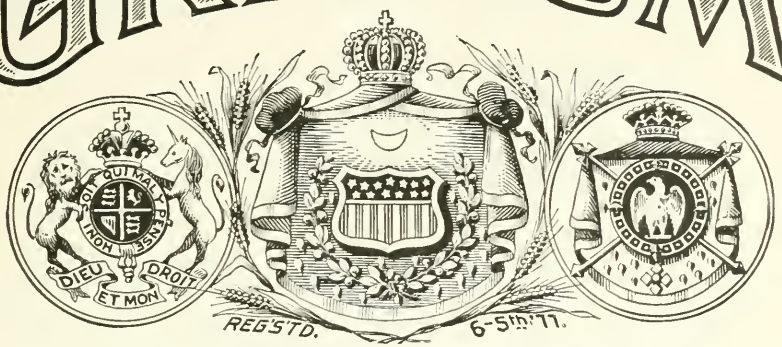

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